

**INVESTOR PRESENTATION-RESOURCES RISING STARS**

Greenvale Energy Ltd (ASX: **GRV**) (**'GRV'**, **'Greenvale'** or **'the Company'**) is pleased to advise that Director and Chief Executive Officer, Mark Turner, will be presenting at the Resources Rising Stars Investor Series, which is to be held at the following locations:

- in Sydney, New South Wales on 14 November 2023. Mr Turner will be presenting at 11:45 AM AEDT / 8:45 AM AWST; and
- in Melbourne, Victoria on 16 November 2023. Mr Turner will be presenting at 2:15 PM AEDT / 11:15 AM AWST.

The presentation slides to be delivered by Mr Turner are attached to this announcement and investors will be able to livestream the presentation at no cost by accessing the following link:

<https://www.resourcesrisingstars.com.au/events>

**Authorised for Release**

This announcement has been approved for release by Kurt Laney, Joint Company Secretary.

**Contact**

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ABN 54 000 743 555



# Transformational growth in rare, high-value commodities for Australia's future

*High-value **bitumen** and **helium** assets with a rapid development pathway*

Resource Rising Stars Summer Series, 14 & 16 November 2023 | Mark Turner, CEO

# Important Information

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This document and all other information (whether in writing or otherwise) which may be made available, or part thereof does not:

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## FORWARD-LOOKING STATEMENTS

This presentation contains forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar

expressions.

The forward-looking statements in this presentation are based on current expectations, estimates, forecasts and projections about Greenvale Energy and the industry in which they operate. However, please note, they do relate to future matters and thus are subject to various inherent risks and uncertainties. Actual events or results may differ materially from the events or results expressed or implied by any forward-looking statements.

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You are cautioned place no undue reliance on any forward-looking statement. The forward-looking statements in this presentation reflect views held only as at the date of this presentation.

## COMPETENT PERSON STATEMENT

The information in this presentation that relates to the Alpha Mineral Resource Estimate is based on information compiled by Mr. Carl D'Silva, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy (Member number 333432). Mr. D'Silva is a full-time employee of SRK Consulting (Australasia) Pty Ltd, a group engaged by the Company in a consulting capacity.

Mr D'Silva has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr D'Silva consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the Mineral Resource Estimate dated 9 March 2022 as announced to the ASX on that date and which is available at [www.greenvaleenergy.com.au](http://www.greenvaleenergy.com.au). The Company confirms that in relation to the Alpha Torbanite Project Mineral Resource Estimate, all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 9 March 2022.

The information in this presentation that relates to liquefaction testing is based on information compiled by David Cavanagh, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy AusIMM Member number 112318. David Cavanagh is a full-time employee of Core Resources.

David Cavanagh has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. David Cavanagh consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**This presentation has been authorised for release by the Board of Greenvale Energy Limited.**

# GRV: Corporate Summary

## CAPITAL STRUCTURE



## BOARD & MANAGEMENT



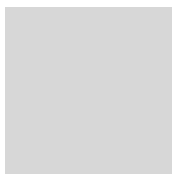
**Neil Biddle**  
*Non-Executive Chairman*

Geologist with +35 years' experience in exploration and mining. Founding Director of Pilbara Minerals, where he oversaw the acquisition, exploration and development of the world-class Pilgangoora Lithium Project.



**Mark Turner**  
*Executive Director*

Engineer with +25 years' experience in the energy sector and a proven track record of major project delivery in oil & gas, water, power, renewables, and nuclear projects.



**Elias Khouri**  
*Non-Executive Director*

Extensive experience in equity markets, with expertise in corporate finance, advisory, capital raisings, joint venture and farm-in negotiations.



**Vince Fayad**  
*Co-Company Secretary*

+35 years' experience in corporate finance, international M&A, accounting and other advisory related services, with strong public company experience.



**Kurt Laney**  
*Chief Financial Officer & Co-Company Secretary*

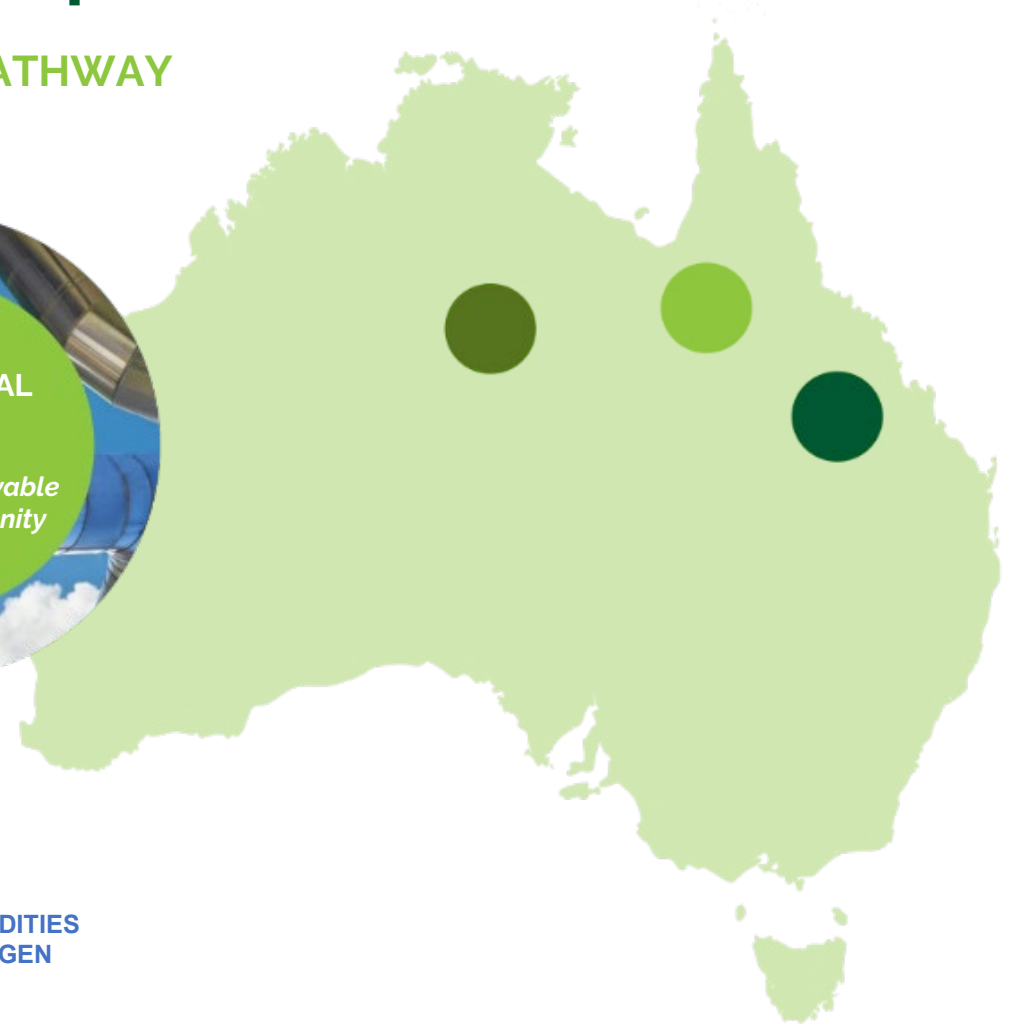
Experienced Chartered Accountant specialising in the provision of accounting, taxation, and corporate secretarial services.

1. Liquid investments include GRV's shareholding in Astute Metals NL (ASX:ASE), with the following shares subject to escrow:

(a) 13.80 million shares which are to be released from escrow on 28 November 2023; and  
 (b) 23.00 million shares which are to be released from escrow on 28 November 2024.

# Greenvale Energy – Our Value Proposition

HIGH-QUALITY ASSETS WITH A CLEAR DEVELOPMENT PATHWAY

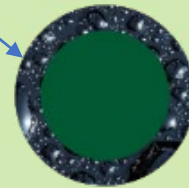


Projects capable of delivering high-value products into strongly growing markets...

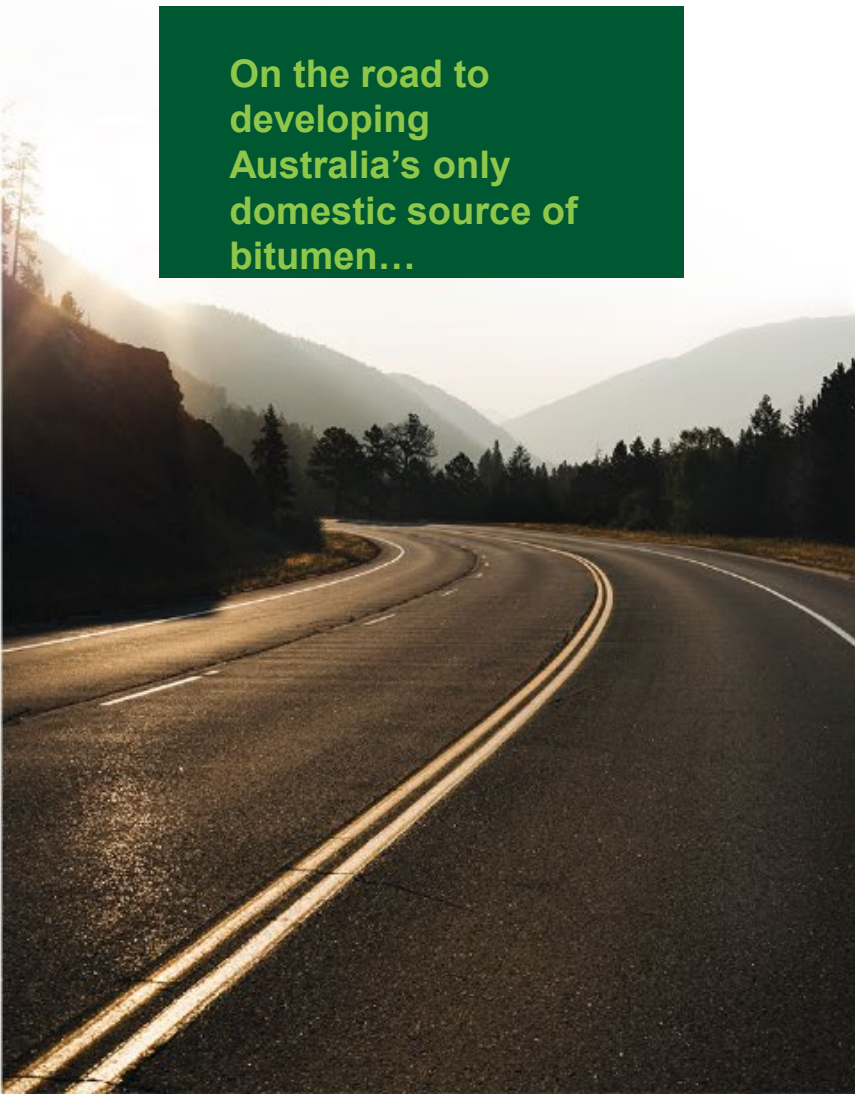
# Alpha Torbanite Project

UNIQUE, HIGH-VALUE PROJECT GEARED TO AUSTRALIA'S  
BURGEONING INFRASTRUCTURE NEEDS

Rare, high-value torbanite deposit located in central Queensland, 500km west of Rockhampton



- One of only two known torbanite deposits in Australia
- Potential to become a key domestic source of bitumen (almost all of Australia's supply is imported) – currently worth ~A\$1,500/tonne
- Development strategy based on the use of geothermal power offset to deliver carbon neutral “green” bitumen
- Opportunity to replace the current use of imported heavy crude oils in the Australian bitumen market

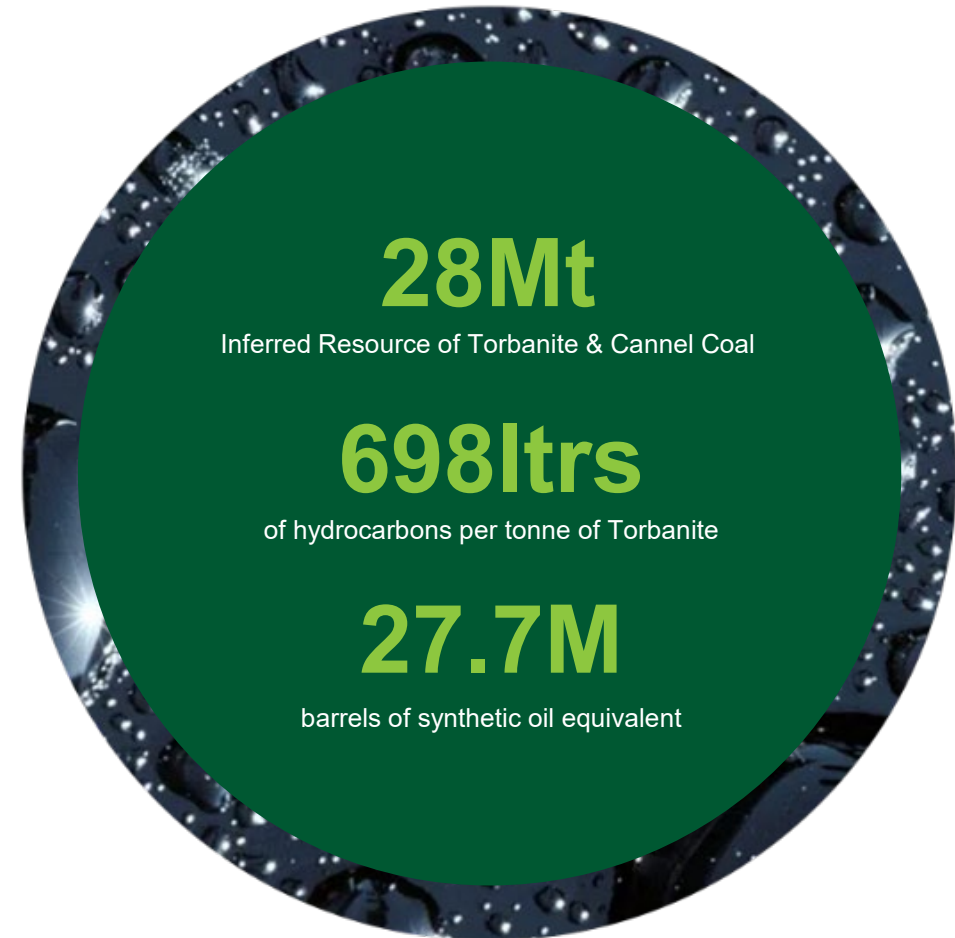


On the road to  
developing  
Australia's only  
domestic source of  
bitumen...

# Alpha: High-Grade, High-Value

## ON THE PATHWAY TO DEVELOPMENT

- Updated Inferred Mineral Resource Estimate of **28Mt** from the previous **18.6Mt** of torbanite and cannelite.
- **27.7 million barrels** of synthetic oil equivalent
- Ultra high-grade: **698 litres** of hydrocarbons per tonne
- Liquefaction test program yielding exciting results:
  - 72% increase in conversion from solids to oil and gas (Test Programs 2 to 3)
  - Test Program 4 now in full swing at Monash University, Melbourne and Licella in NSW
- Updated Mineral Resource and liquefaction results to underpin Pre-Feasibility Study for project development



Refer to GRV ASX Announcement 13 Nov 2023

# Alpha: Key Upcoming Catalysts

## POISED FOR A PERIOD OF INTENSIVE NEWS-FLOW

- Test Program 4 Liquefaction Results to establish a definitive processing pathway
- Certified product from Technix
- Pre-Feasibility Study
- Customer engagement

## High-quality partners:

### Technical Consultants



### Carrier Oil and Supercritical Water Testing Program



### Supercritical Water Testing Program



### Bituminous Product Advisor

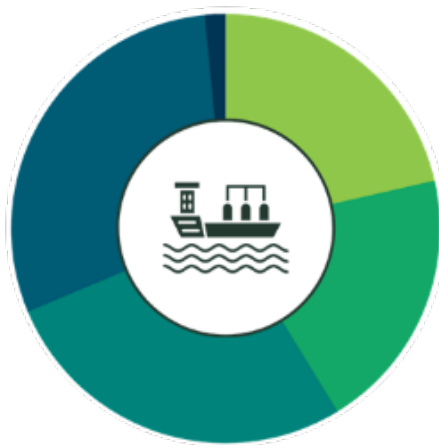




# An Exciting, High-Value Growth Market

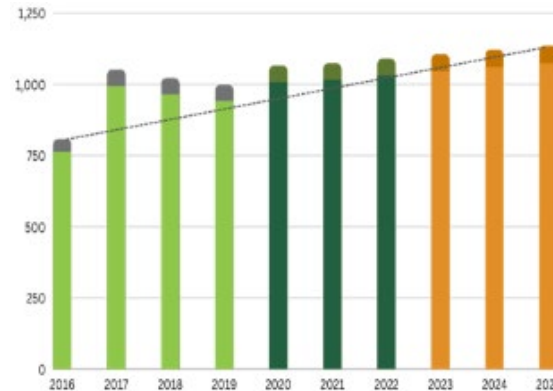
BITUMEN IMPORTATION FEEDS CRITICAL INFRASTRUCTURE, WITH A HEAVY RELIANCE ON CHINA

Australian Bitumen Imports by Country of Origin



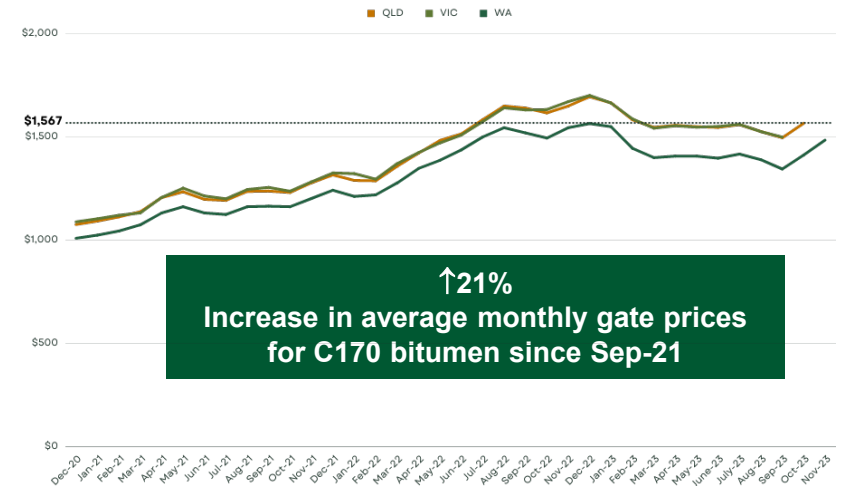
- China (ex. SARs and Taiwan) 21.4%
- Korea, Republic of (South) 19.8%
- Singapore 27.4%
- Thailand 29.8%
- Other 1.6%

Australian Bitumen Demand by Volume ('000t)



- Historical Gov't Funded Roads
- Historical Total
- Estimate Gov't Funded Roads
- Estimate Total
- Outlook Gov't Funded Roads
- Outlook Total

C170 Bitumen Price Index (A\$/tn)



↑21%  
Increase in average monthly gate prices for C170 bitumen since Sep-21

The bitumen index is the straight average of the major bitumen suppliers' Monthly Gate List Prices (Published List Selling Price) for C170 grade bitumen. Source: vicroads.vic.gov.au; mainroads.wa.gov.au; tmr.qld.gov.au

**\$1,567/tonne**  
**QLD C170 closing price as at Oct-23**

Source: Department of Climate Change, Energy, the Environment and Water, Australian Petroleum Statistics SEP 2022

Source: Argus Asphalt Annual 2021 – Bitumen Demand & Government Funded Roads Australia

# West Walker Project

## HIGH-GRADE HELIUM AND HYDROGEN OPPORTUNITY IN CENTRAL AUSTRALIA



Farm-in agreement with Mosman Oil & Gas to acquire a 75% interest in EP145 in the Amadeus Basin

- Amadeus Basin has some of the highest concentrations of helium globally, as well as confirmed hydrogen accumulations
- EP145 sits within recognised play fairways for helium and hydrogen and contains proven hydrocarbon discoveries
- Lies on-trend with the producing Merenie Oil & Gas Field
- Successful helium wells located along the margins of the Amadeus Basin at Mt Kitty-1 and Magee-1
- Existing pipeline infrastructure to Australian East Coast provides opportunity for early commercialisation

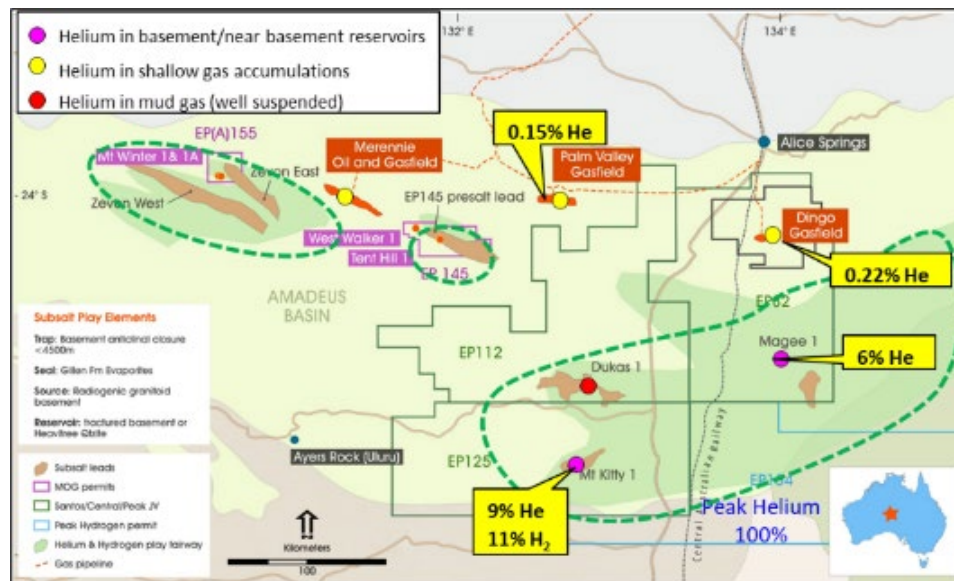
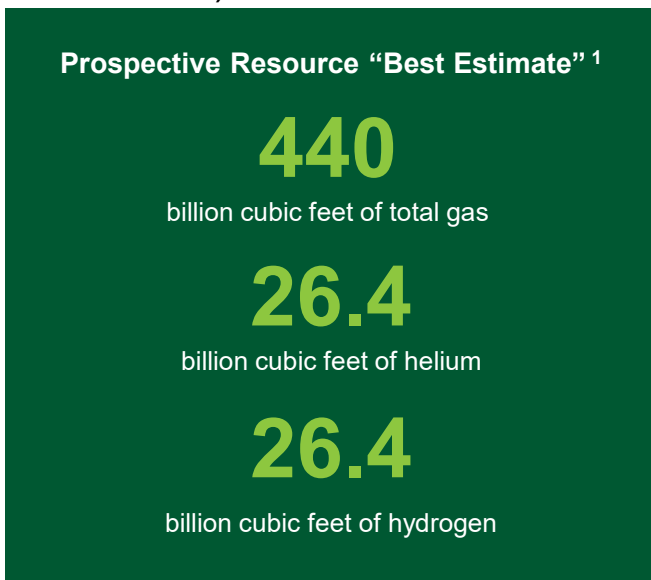


**Exciting growth opportunity in helium, hydrogen and natural gas in the infrastructure-rich Amadeus Basin...**

# West Walker Project

## PROVEN HELIUM AND HYDROGEN POTENTIAL, CLOSE TO EAST COAST GAS MARKETS

- Mosman Oil & Gas reported a Prospective Resource Estimate for EP 145 in October 2022:
  - “Best Estimate” of **440Bcf Total Gas**, including **26.4Bcf helium** and **26.4Bcf hydrogen**
- Dataset is very limited, with few wells drilling below the palaeozoic play – significant untested potential
- High-value products – helium currently worth ~US\$450/mcf
- Opportunity for near-term cash-flow from natural gas production linked to existing infrastructure (North & East Coast markets)

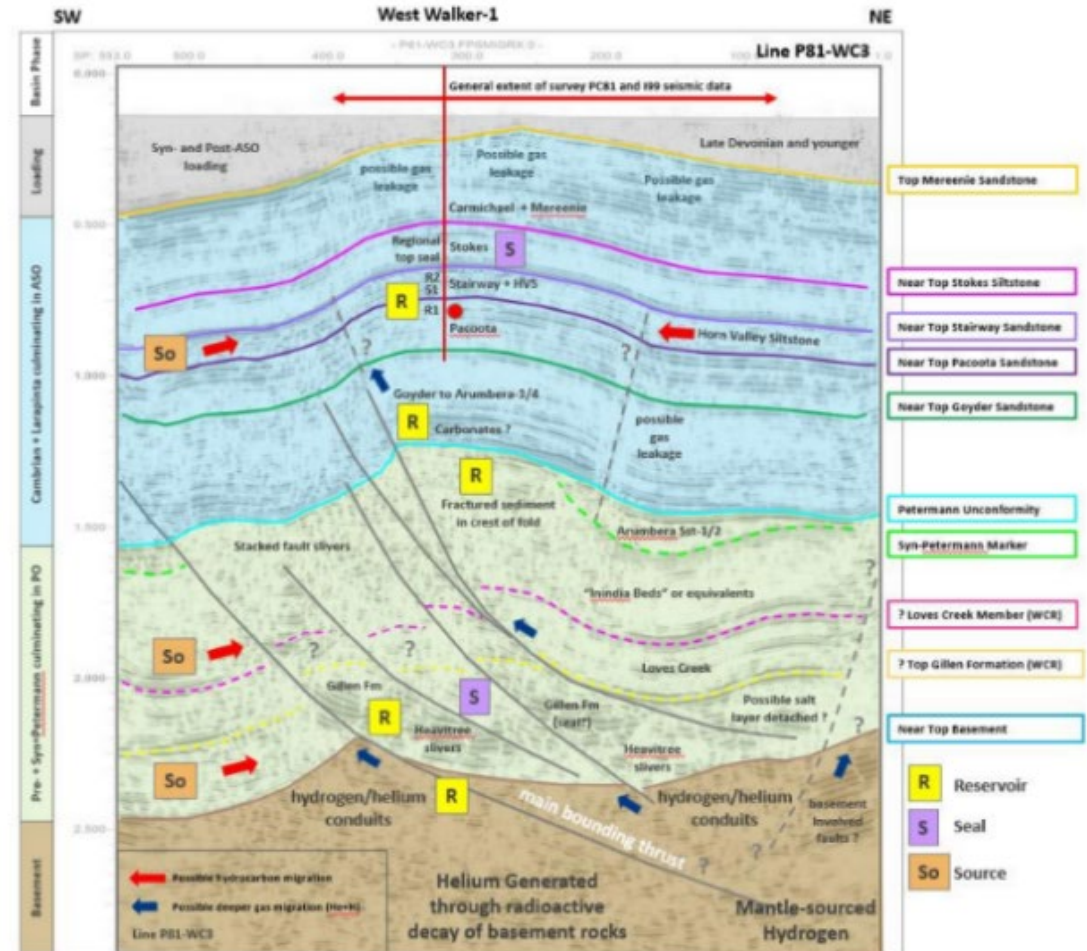
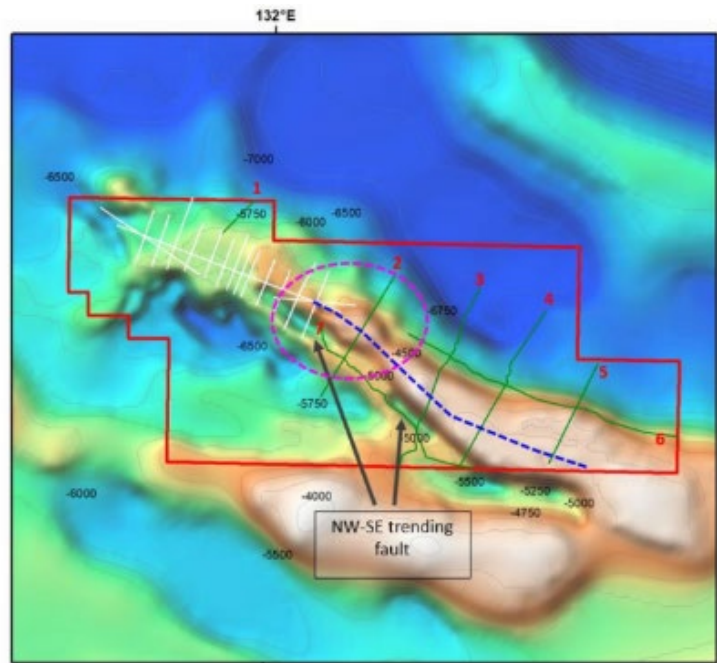


<sup>1</sup> Applying the SPE PRMS standard

# West Walker Project

## NEXT STEPS – RAPID PATHWAY TO UNLOCK VALUE

- Acquisition of 2D seismic data
- Interpretation of seismic results to support planning for an initial drilling program
- Drilling “sweet-spot” identified in EP145 which could test all targets – helium, hydrogen and natural gas



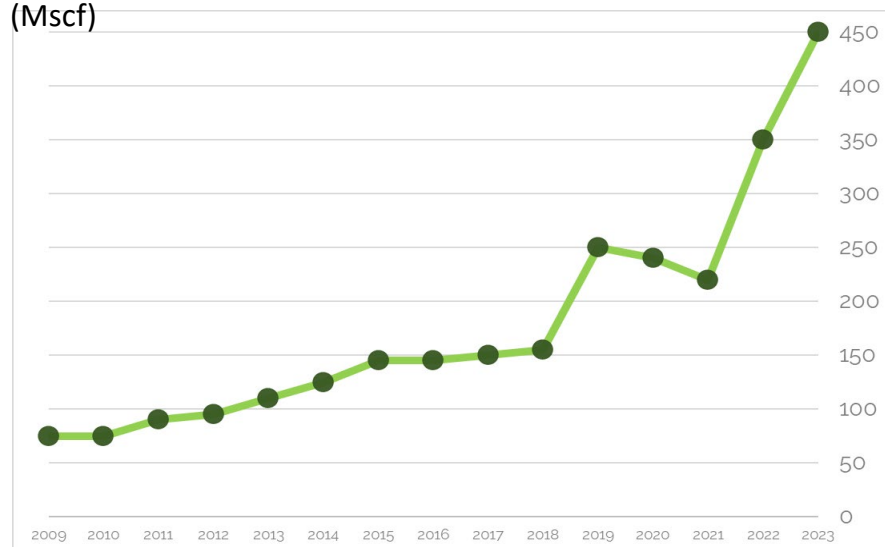
# Helium: Surging Price and Fast-Growing Market

A HIGH-VALUE COMMODITY WHICH IS EXPERIENCING EXPONENTIAL PRICE GROWTH

## Historical price of bulk liquid helium

US\$/thousand standard cubic feet

(Mscf)



Source: Kornbluth Consulting LLC

Fragile supply and surging demand is driving significant upward momentum in the helium price.

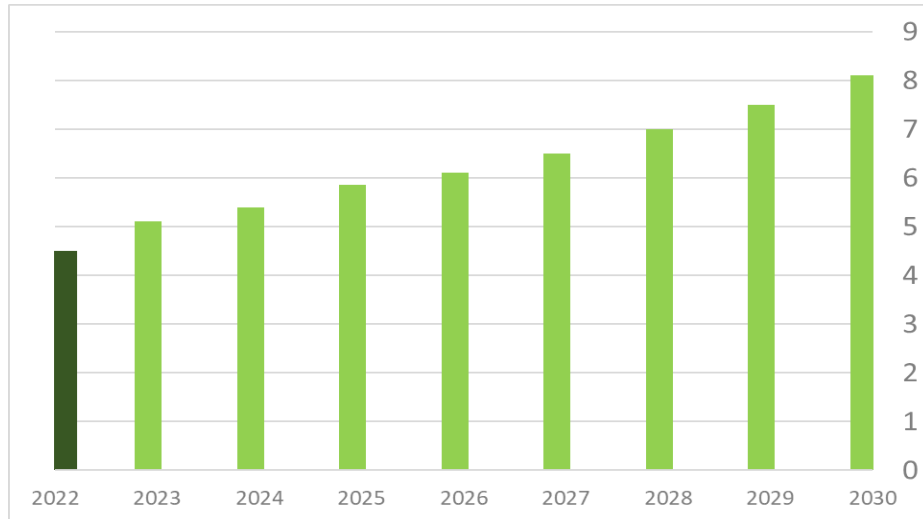


# Helium: Essential to A High-Technology World

THE HELIUM MARKET IS GROWING RAPIDLY AS TECHNOLOGY AND ARTIFICIAL INTELLIGENCE EVOLVES

Estimated Global Helium Market  
US\$ billions

Actual  
Forecast

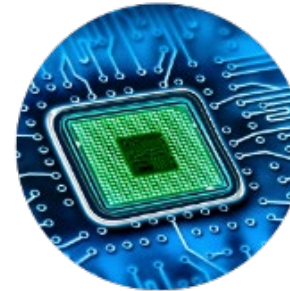


Source: The Business Research Company, Helium Global Market Report 2023. Published January 2023

The global helium market is forecast to grow from US\$5 billion in 2023 to over US\$8 billion by 2030.



**MRI**  
22% Market Share  
Demand to remain steady



**Semiconductors**  
19% Market Share  
Demand to double in 5 years



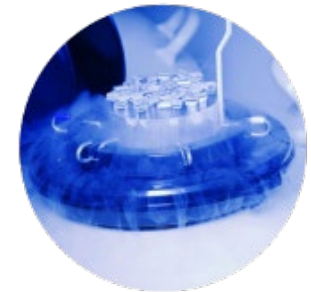
**Welding**  
12% Market Share  
Demand to remain steady



**Aerospace**  
8% Market Share  
Demand to double in 10 years



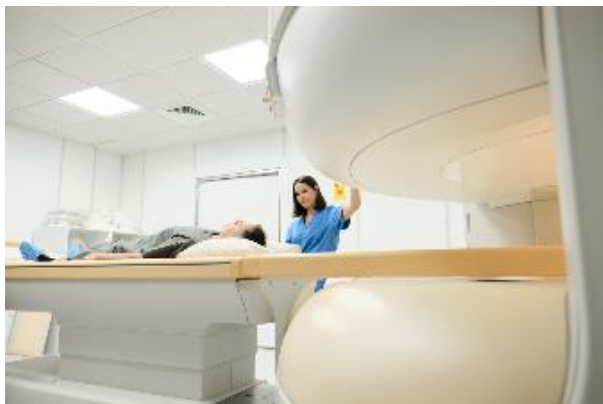
**Optical Fibre**  
3% Market Share  
Demand to double in 10 years



**Cryogenics**  
3% Market Share  
Demand to double in 10 years

# Helium, Hydrogen, Natural Gas

## HIGH-VALUE COMMODITIES WITH OUTSTANDING MARKET FUNDAMENTALS



### Helium

- Lowest cooling temperature of any element – invaluable for medical, manufacturing and scientific applications
- Annual demand expected to rise from 6.0Bcf to 8.5Bcf by 2030, fueled by rising demand in cryogenics and welding applications
- Periods of severe supply shortages since 2006, including rationing by suppliers
- Price for large quantities at the source increased by 11% p.a. from 2006-2022 to ~US\$450/mcf in late 2022<sup>1</sup>

<sup>1</sup> Kornbluth, 2023 <sup>2</sup> AER



### Natural Hydrogen (Gold Hydrogen)

- Alternative, clean, carbon-free fuel
- Requires no additional energy input from either fossil fuels or renewables
- Natural Hydrogen is continuously created, constantly replenished
- GRV will be ideally positioned to take advantage of future hydrogen markets at its West Walker Project



### Natural Gas

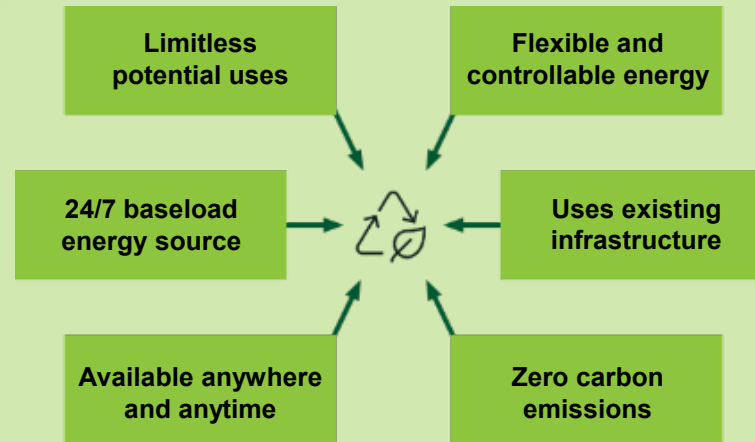
- As Australia transforms to meet Net Zero emissions, gas will continue to complement renewable energy to provide reliable and dispatchable electricity
- Australian gas prices in downstream markets averaged around \$14.50/GJ for Q2 2023<sup>2</sup>

# Geothermal Opportunity

## UNTAPPED RENEWABLE ENERGY OPPORTUNITIES IN QUEENSLAND

### Major Government investment to deliver on renewable targets

- 2023-24 State Budget committed \$19B over four years to deliver more renewable energy to the Queensland SuperGrid
- Queensland Energy & Jobs Plan to unlock 100,000 new industrial jobs in hydrogen, renewables, manufacturing, and critical minerals



### Technology

#### Closed-Loop System

Closed-loop geothermal well system, where fluid is circulated down the well through concentric tubes that act as a down-hole heat exchanger. The fluid is fully contained and has zero interaction with below-ground formations or aquifers.

*"It represents the most significant investment ever in Queensland's publicly owned electricity system and will help us power Queensland with 70% renewable energy by 2032 and 80% by 2035"*

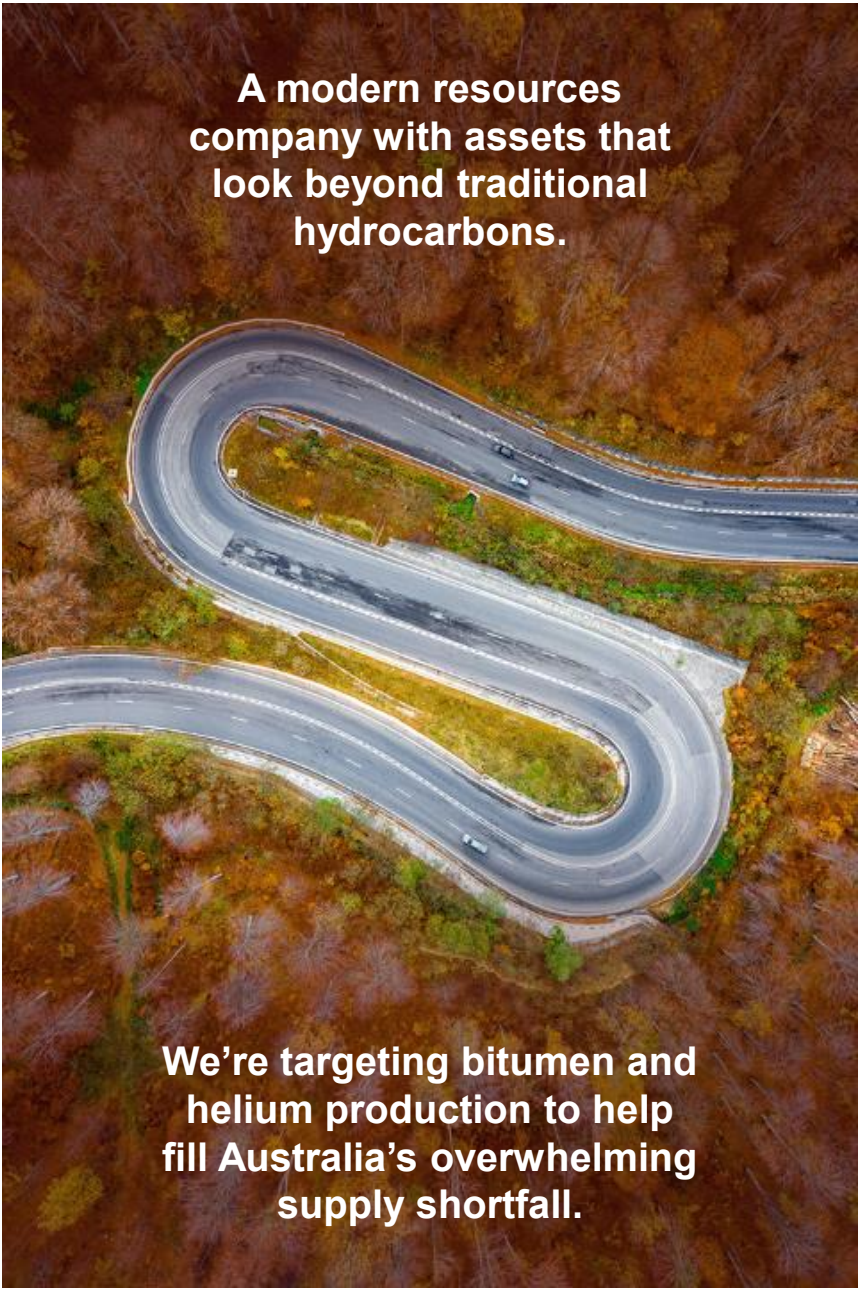
Queensland Premier, Annastacia Palaszczuk



# Key Investment Takeaways

## MULTIPLE VALUE-CREATION PATHWAYS

- ✓ A unique growth opportunity in **rare, critical, high-value** commodities
- ✓ Alpha Torbanite Project advancing towards **commercialisation**
- ✓ Ideally positioned to become Australia's only end-to-end **domestic source of bitumen** for burgeoning infrastructure demand
- ✓ Exciting new **high-grade helium, natural gas and hydrogen** growth opportunity secured in the Amadeus Basin, close to existing gas infrastructure
- ✓ Demand for helium increasing with supply decreasing – **price expected to continue rising** and will do for the foreseeable future
- ✓ Poised to capitalize on **future hydrogen market opportunities** as Queensland aims to be a hydrogen hub
- ✓ **Geothermal strategy** advancing in Queensland
- ✓ **Experienced team** with exceptional track record of value-creation for shareholders



A modern resources company with assets that look beyond traditional hydrocarbons.

We're targeting bitumen and helium production to help fill Australia's overwhelming supply shortfall.